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THE PLANT DISEASE BULLETIN

Issued By

The Plant Disease Survey

VOLUME II. NUMBER 13.

November 1, 1918.

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

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APPLE

Bitter Rot caused by Glomerella cingulata.

Alabama: (Peltier) Very prevalent and destructive in all unsprayed orchards, which means practically all orchards in the state.

Arkansas: (Elliott) Less than 1% loss.

Washington and Benton Counties: (W. J. Roberts) Very slight. Dry weather prevented development this season.

South Carolina: This is the only apple disease in this section that causes serious loss. It often destroys from 5 to 50% of the crop, depending on the care used in spraying for control.

Tennessee: (Essary) Disease common, although damage is slight compared to previous season. Little damage where spraying is followed. Apples seen on market appear only slightly affected.

Virginia: (Fromme) Not nearly so destructive as in previous years. Where infection occurred it was only slight or moderate. The Piedmont Section escaped with only very slight injury.

(Market inspection at Memphis, 1 car, Sept. 26.) Bitter rot was found on 8 to 10% of Black Bens and Arkansas Blacks, mostly in small spots with an occasional apple decayed.

Blotch caused by Phyllosticta solitaria.

Alabama: (Peltier) Very prevalent and destructive in unsprayed orchards.

Arkansas: (Elliott) Very serious in some cases and is found in all parts of the state. Heaviest infection in eastern part of state, probably 2% loss of total crop.

Washington and Benton Counties: (J. W. Roberts) Generally severe, especially so in most dusted orchards and in those that were unsprayed.

Mississippi: (Fields) Considerable blotch seen this year in all parts of state.

Missouri: (Pierce) General and severe in McDonald County, affecting less than 5% of fruit where Bordeaux was applied three weeks after petal fall. Reduction in yield on susceptible varieties 40%. Disease first noted June 14.

New Jersey: (Massey) General but doing moderate damage over the state. Severe on fruit locally.

Oklahoma: (Learn) The most prevalent apple disease. Some orchards show more or less of it in spite of spraying.

South Carolina: A minor disease for this section, seldom giving serious trouble.

Virginia: (Fromme) Scattered over state on early apples and on Ben Davis. As a rule only a few affected trees are found in an orchard and the losses are as yet not appreciable.

Black Rot caused by Physalospora cydoniae.

Arkansas: (Elliott) About 5% total loss. Well sprayed orchards lost from 1/2 to 2% of crop. Unsprayed orchards showed from 10 to 100% of fruit infected.

Benton and Washington Counties: (Pierce) Generally severe on fruit of unsprayed and dusted orchards. Ben Davis and Gano most affected. About 10% reduction in yield.

Oklahoma: (Learn) Quite generally distributed over the state and is probably next in importance to blotch in severity.

South Carolina: Seldom gives trouble in this section.

Tennessee: (Essary) Very common in unsprayed orchards. It caused defoliation of trees early in the season and a serious rotting of the fruit in certain sections, particularly parts of the Cumberland Plateau.

APPLE

Bitter rot caused by Glomerella cingulata

Alabama (Weimer): Very prevalent and destructive in all unsprayed orchards, which means practically all orchards in the state.
Arkansas (Dunegan): Less than 1% loss.
Washington and Benton Counties (H. R. Rosen): Very slight. Dry weather prevented development this season.
South Carolina: This is the only apple disease in this section that causes serious losses. It often destroys as high as 50% of the crop, especially where [illegible] used in spraying the orchards.
Tennessee (Hesler): [illegible] season, [illegible] damage in attack compared to previous season. Little [illegible] spraying in [illegible]. [illegible] may [illegible].
Virginia (Fromme): [illegible] as destructive as in previous years. [illegible] the [illegible] it was only slight to moderate. [illegible] with [illegible] variety.
[illegible]

Blotch caused by Phyllosticta solitaria

Alabama (Weimer): Very prevalent and destructive in unsprayed orchards.
Arkansas (Dunegan): Very serious in this state and is found in all parts of the state. Heaviest infection in eastern part of state, probably 5% loss of total crop.
Washington and Benton Counties (H. R. Rosen): [illegible]
[illegible]
Kentucky (Valleau): The most troublesome apple disease. Some orchards [illegible]
South Carolina: [illegible]
Tennessee (Hesler): [illegible]

Black rot caused by Physalospora malorum

Arkansas (Dunegan): [illegible]
[illegible]
Delaware (Adams): Quite generally distributed over the state [illegible]
South Carolina: Causes some trouble in this section.
Tennessee (Hesler): Very common in unsprayed orchards. It caused defoliation of trees early in the season and a serious rotting of the fruit in certain sections, particularly parts of the Cumberland Plateau.

Virginia: (Fromme) Perhaps the most serious disease this season. It was reported from all sections of the state, with material reductions in the yields in many orchards. Heavy defoliation has resulted in some orchards by the middle of July.

Scab caused by *Venturia inaequalis*.

Arkansas: (Elliott) Serious and very little fruit escaped infection.

Washington and Benton Counties: (J. W. Roberts) Severe generally, except in sprayed orchards. Orchards dusted from four to six times showed about as much scab as those that were untreated. Loss in dusted and unsprayed orchards 25-85% of crop. First noted on fruit April 23. 10% of crop of susceptible varieties will be lost.

Connecticut, Vicinity of Wallingford and Meriden: (J. W. Roberts, July 19.) Some scab on leaves but very little on fruit, even on very susceptible varieties, such as McIntosh.

Missouri, Southwestern Section: (J. W. Roberts) Severe generally. Largely controlled by spraying.

New Jersey: (Massey) Moderate infection in some orchards. Present over the state but not serious. Disease controlled by spraying.

New York: (Market inspection at Pittsburgh, 1 car, Aug. 27.) Scab infection in car 62%, 50% of fruit severely affected and 12% with from 1 to 10 scab spots.

Oregon: (Owens) In most portions of the state the loss from scab this year will be practically nothing. Wherever usual scab sprays were applied the disease was controlled.

Virginia: (Fromme) Unusually severe in southwestern Virginia. In that section unsprayed trees had 100% infection and as much as 75% of the fruit was infected in some sprayed orchards. Failure to apply the "pink" spray and the favorable spring (damp and cool) are held responsible for this heavy scab attack. The Piedmont and Upper Valley which produces the bulk of the apple crop of the state were practically free from scab.

Blister Canker caused by *Nummularia discreta*.

Oklahoma: (Learn) Present in slight amounts locally.

Virginia: (Fromme) Becoming more prevalent. It is found in orchards of ten years or older and mostly in poorly cared for plantings. As a rule infection is confined to a few trees in an orchard.

Cedar Rust caused by Gymnosporangium *Juniperi-virginianae*.

New Jersey: (Massey) Severe locally. Noted as being worst on Wealthy.

Virginia: (Fromme) Common throughout the Valley and southwestern Virginia, with the heaviest losses in Botetourt and Shenandoah Counties. Some crops of York Imperial were a total failure. All things considered disease is not as severe as in 1917.

Fire Blight caused by *Bacillus amylovorus*.

Arkansas; Benton and Washington Counties: (Pierce) Of local distribution and moderate. Principal damage was killing of considerable young growth on Jonathans and Maiden Blush. Slight loss. First noted April 25. No control measures practiced.

New Jersey: (Massey) Severe all over state this season on twigs, blossoms and fruit. Five percent reduction in yield is estimated.

Oklahoma: (Learn) Observed in small amounts this year.
South Dakota, Vicinity of Brookings and Watertown: (Pammel, Aug. 2-3.) Disease of moderate severity. Nearly all varieties of Transcendent Crab type especially affected. Some blight also on other varieties. Much variation noted as regards susceptibility of varieties.
Virginia: (Fromme) Very slight. The only severe injury reported was from southwestern Virginia and involved twigs and blossoms.

Powdery Mildew caused by Podosphaera leucotricha.

Washington, All Irrigated Apple Districts: (Fisher) Damage mostly due to reduction in vitality of trees and prevention of fruit bud formation. Infection is very general and serious in some sections of all districts and perhaps to some extent in nearly every orchard. Mildew russets the fruit, causing a loss of grade and there will be heavy losses this year in many orchards on this account. Spraying was generally started too late for best results. None of the sulfur sprays, which are most effective against mildew, can be used after hot weather starts in these regions of intense sunlight as severe fruit burning always results.

Black Root Rot caused by Xylaria sp.

Virginia: (Fromme) Caused greater loss of trees than any other agency, with mice injury a close second. There is apparently little or no fluctuation due to seasonal conditions.

Sun Scald.

Virginia: (Fromme) The hot sun of late July and early August damaged the fruit from 5 to 10% in many orchards in the greater part of the Valley Section. Injury greatest on York Imperial and Ben Davis. Average loss for state probably not more than from 2 to 3%.

Brown Rot caused by Sclerotinia cinerea.

Delaware: (Market inspection at Detroit, 1 car, July 20.) Average brown rot infection about 8% but some hampers contained 20% decay.
Maryland: (Market inspection at Detroit, 1 car, July 30.) Decay irregular, average 5%.
Ohio: (Market inspection at Detroit, 1 car, Aug. 6.) Brown rot slight in variety Wealthy which averaged 3%; balance of stock showed 20% infection.

CABBAGE

Club Root caused by Plasmodiophora brassicae.

Connecticut: (Clinton, Oct. 15.) Recorded from six localities on cabbage. First reported June 29. Presence more pronounced than usual.
Illinois, Chicago Market Gardens: (Walker and Gardner, July 12.) Very severe in some fields. In one field 50% of the plants were affected.
Massachusetts: (Osmun) Present in all parts of the state. First noted at Amherst May 1. 90% of clubbed plants observed in some cases. Loss much less where heavy application of lime was made.
Michigan: (Coons) Known only as a garden disease. No reports this year.
New Hampshire: (Butler, Oct. 15.) Considerable injury in one field in Strafford County.

Clinton (Leaves) [illegible] this year.
North Carolina [illegible]

[illegible] [illegible]

[illegible]

[illegible] [illegible]

[illegible]

[illegible] [illegible]

[illegible]

[illegible] [illegible]

[illegible]

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[illegible]

[illegible]

[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]

New York: (Chupp) Reported from 10 counties this year. Common in the cabbage sections of Long Island, in Cortland County and about Buffalo.

Ohio: (Selby) Possibly slightly less than normally. Most widely and generally distributed northward, although localities are reported southward to Ohio River. Reported from six counties this year.

Pennsylvania: (Orton) Occurs in most cabbage growing regions. Reported in amounts ranging from a trace to 50% in 15 counties.

Wisconsin: (Vaughan) About the same as last year. First noted in seed bed at Racine, June 24. Some lots of plants set on old, unlimed, club root soil had nearly 75% of plants that failed to mature heads.

Yellows caused by *Fusarium conglutinans*.

Connecticut: (Clinton) Disease never reported.

Illinois, Chicago Market Gardens: (Walker and Gardner, July 12.) Disease just beginning to show. Severe in many gardens.

Indiana, Vicinity of Plymouth: (Gardner, July 14.) Slight locally.

Iowa: (Melhus) Very prevalent on both early and late cabbage. The loss often exceeds 50% of the crop in individual fields.

Michigan: (Coons) Areas about Grand Rapids, Coldwater and Monroe known to have disease. Probably around Plymouth also. Areas show increase in size this year. Hollander satisfactory so far as resistance goes but is too late for these growers.

New Jersey: (Massey) Rather severe locally.

New York: (Chupp) Specimens obtained from Cortland, Nassau and Erie Counties. Not prevalent to any extent in the state as a whole.

Ohio: (Selby) Less prevalent than normally in cabbage districts. Very little reduction of stand from yellows or other diseases, although the crop is out to about 1/2 by drought. Heads of cabbage small (3 to 4 pounds).

Pennsylvania: (Orton) Probably more prevalent than usual. Reported from 7 counties in amounts ranging from very slight to 5% loss.

Wisconsin: (Vaughan) Disease spreading slowly. Appeared in seed bed about June 20. Losses very limited because resistant seed is used almost universally on infected area. Between 800 and 1000 pounds of resistant Wisconsin Hollander Seed is available. Those desiring it should apply to W. J. Hansche, R. D. 4, Racine, or S. B. Walker and Son, R. D. 4, Racine. Dry, hot weather together with excessive injury of green cabbage worms have greatly reduced the crop. Heads very small.

Black Rot caused by *Bacterium campestre*.

Iowa: (Melhus) Prevalent over state; in only a few cases did it cause serious loss. Most prevalent in northeastern portion of state.

Kansas: (Melchers) Reported but twice (Lyon and Riley Counties); not common throughout state as a whole.

New Jersey: (Massey) Generally severe. Causing a loss of from 2 to 3%.

New York: (Chupp) Judging from lack of reports there is only a little black rot this year. Slight amount observed in Suffolk and Cortland Counties.

Pennsylvania: (Orton) Reported from 6 counties in amounts ranging from a trace to 80%. It would appear that disease was more prevalent than usual.

Wisconsin: (Vaughan) Very little black rot this season owing to dry late summer.

Black Leg caused by *Phoma oleracea*.

Illinois, Chicago Market Gardens: (Walker and Gardner, July 12.) Very slight locally.

New York: (Chupp) Reported from 10 counties this year. Common on the western sections of Long Island, in Cortland County and about Buffalo.

Ohio: (Kelley) Possibly slightly less than normally. Most widely and generally distributed northward, although localities are reported southward to Ohio River. Reported from six counties this year.

Pennsylvania: (Orton) Occurs in most cabbage growing sections. Reported in amounts ranging from a trace to 50% in 15 counties.

Wisconsin: (Vaughan) About the same as last year. First noted at [illegible] Racine, June 12. Some lots of plants set on old, [illegible] soil had nearly 75% of plants that failed to mature heads.

Failure caused by *Bacterium campestre*.

Connecticut: (Clinton) Disease never reported.

Illinois. Chicago Market Gardener (Kalisz and Gardner, July 15): [illegible] beginning to show. Severe in many gardens.

Indiana. Vicinity of Lafayette (Gardner, July 15) [illegible].

Iowa. (Melhus) Very prevalent on both early and late cabbage. The loss often exceeds 50% of the crop in individual fields.

Michigan. (Coons) Severe about Grand Rapids, Rochester and [illegible] heads diseased. [illegible] around Plymouth also. [illegible] this year. [illegible] satisfactory so far as [illegible] late for these growers.

New Jersey. (Schmidt) Rather severe locally.

New York: (Chupp) Specimens obtained from [illegible] but prevalent to any extent in the state as a whole.

Ohio: (Kelley) Less prevalent than normally in cabbage districts. [illegible] the reduction [illegible] as much as 10% [illegible] heads of cabbage [illegible].

Pennsylvania: (Orton) Probably more prevalent than normal. Reported from 15 counties in amounts ranging from very slight to 50 loss.

Wisconsin: (Vaughan) Disease [illegible] June 21. [illegible] very limited [illegible] only in infested areas. Between 500 and 1000 [illegible] heads [illegible]. Heads very small.

[illegible] caused by [illegible].

Illinois. [illegible] prevalent [illegible] in only a few cases [illegible].

Iowa. Most prevalent in northwestern portion of state.

Michigan. [illegible]

New Jersey. (Schmidt) Generally severe. [illegible]

New York: (Chupp) [illegible]

Pennsylvania: (Orton) [illegible] from 5 counties in amounts ranging from [illegible].

Wisconsin: (Vaughan) Very little [illegible] this season [illegible].

Black leg caused by *Phoma lingam*.

Illinois. Chicago Market Gardener (Kalisz and Gardner, July 15) Some [illegible] locally.

Iowa: (Cromwell) General in Mitchell and Muscatine Counties. Collected from 8-acre field in Mitchell County in which the disease caused 75% loss.

Ohio: (Selby) Less prevalent than in 1917. Reported from Gallia and Lucas Counties.

Wisconsin: (Vaughan) Of general occurrence and in some fields very severe, 90% or more of plants being injured. Disease has been observed and reported from Mississippi River, Central and Lake Shore Sections. First noted in seed beds in June. In some cases seed treatment has been effective and in others not so, evidently depending on the character of the infection. Formaldehyde was the disinfectant most widely used.

Rot probably caused by *Bacillus carotovorus*.

Colorado: (Market inspection at New Orleans, 1 car, Sept. 4.) Decay found scattered through load and trimming of 5 leaves necessary to get clean stock.

Illinois: (Market inspection at Cincinnati, Fort Worth, Memphis, New Orleans, and Pittsburgh, 16 cars, July 30-Sept. 27.) Average for cars 40%, some cars with as high as 100% infection, all cabbage affected in 4 to 7 outer leaves, the decay extending well into heart at stem end in many cases.

Indiana: (Market inspection at Memphis, 1 car, Sept. 4.) In top half of load 75% of heads were totally decayed, 50% of bottom half being decayed to a depth of 4 to 6 outer leaves.

Iowa: (Market inspection at Cincinnati, 1 car, Sept. 6.) An occasional head with 3 to 5 outer leaves with slimy decay.

Michigan: (Market inspection at Memphis, 1 car, Sept. 17.) About 7% decay which affected 2 to 5 outer leaves, an occasional head badly decayed.

Minnesota: (Market inspection at Memphis, 5 cars, July 3-Sept. 3.) Decay in all cars heaviest at top of load, in each car running as high as 50% which extended into 6 to 8 outer leaves and well into stem end; the lower half of load with 15% decay in 2 to 4 outer leaves.

Nebraska: (Market inspection at New Orleans, 1 car, Sept. 9.) Twenty percent of heads totally decayed; balance of heads requiring trimming of 6 leaves to make stock salable.

New York: (Market inspection at Cincinnati, 1 car, Sept. 28.) Slimy decay in outer 3 to 7 leaves of 20% of heads.

Ohio: (Market inspection at Cincinnati and Pittsburgh, 2 cars, Aug. 29-30.) Infection for the 2 cars 50 and 100%, cabbage being a mass of slime.

Pennsylvania: (Market inspection at Pittsburgh, 1 car, July 25.) Bacterial rot in outer leaves of an occasional head noted.

Virginia: (Market inspection at New Orleans, 6 cars, Aug. 21-29) In 5 cars the total decay averaged 20%, the balance of cabbage in each car requiring trimming of 3 to 19 outer leaves to make stock sound; this decay occurring throughout the other car, trimming of 5 to 7 leaves necessary.

Wisconsin: (Market inspection at Des Moines and New Orleans, 2 cars, Aug. 27, Sept. 5.) Slimy soft rot occurring throughout both loads, in one car outer 3 to 4 leaves affected; the other car with 40 to 50% of heads decayed in stem to depth of 1 to 2 inches, requiring trimming of 6 to 8 outer leaves.

Black Mold caused by *Alternaria brassicae*.

Cars arriving at Pittsburgh and Des Moines from Illinois, Ohio and Wisconsin showed black mold affecting the outer 2 to 3 leaves on from a few to 18% of the heads.

Gray Mold caused by *Botrytis* sp.

New York: (Market inspection at Philadelphia, 1 car, Sept. 14.) Ten percent of heads covered with gray mold.

Iowa: (Cromwell) General in Mitchell and Muscatine Counties. Collected from 6-acre field in Mitchell County in which the disease caused [illegible] loss.
Ohio: (Selby) Less prevalent than in 1917. Reported from Geauga and [illegible] Counties.
Wisconsin: (Vaughan) Of general occurrence and in some fields with [illegible] 20% or more of plants being injured. Disease has been observed and reported from Mississippi River, Central and Lake Shore sections. First noted in seed beds in June. In some cases seed treatment has been effective and in others not so, evidently depending on the character of the infection. Formaldehyde was the disinfectant most widely used.

Rot probably caused by Bacillus carotovorus.

Colorado: (Market inspection at New Orleans, 1 car, Sept. 6.) Decay found scattered through load and trimming of 5 leaves necessary to get clean stock.
Illinois: (Market inspection at Cincinnati, Fort Worth, Memphis, New Orleans, and Pittsburgh, 18 cars, July 30-Sept. 27.) Average for cars [illegible], some cars with as high as 100% infection, all cabbage affected to 4 to 7 outer leaves, the decay extending well into heart at stem end in many cases.
Indiana: (Market inspection at Memphis, 1 car, Sept. 4.) In top half of load [illegible] of heads were totally decayed, [illegible] of bottom half being decayed to a depth of 4 to 5 outer leaves.
Iowa: (Market inspection at Cincinnati, 1 car, Sept. 6.) An occasional head with 3 to 5 outer leaves with slimy decay.
Michigan: (Market inspection at Memphis, 1 car, Sept. [illegible].) About [illegible] decay which affected 2 to 4 outer leaves, an occasional head being decayed.
Minnesota: (Market inspection at Memphis, 3 cars, July 9-Sept. [illegible].) Decay in [illegible] cars prevalent at top of load, in each car running as high as [illegible] extended into 6 to 8 outer leaves and well into stem end; the lower half of load with [illegible] decay on 2 to 4 outer leaves.
Nebraska: (Market inspection at New Orleans, 2 cars, Sept. [illegible].) Twenty percent of heads totally decayed. Balance of heads requiring trimming of 6 leaves to make stock saleable.
New York: (Market inspection at Cincinnati, 1 car, Sept. [illegible].) Slimy decay in outer 3 to 7 leaves of 20% of heads.
Ohio: (Market inspection at Cincinnati and Pittsburgh, 2 cars, Aug. [illegible]) Infection for the 2 cars 50 and 100% [illegible] being a mass of slime.
Pennsylvania: (Market inspection at Pittsburgh, 1 car, July [illegible].) [illegible] outer leaves of an occasional head rotted.
Wisconsin: (Market inspection at New Orleans, 2 cars, Aug. [illegible]-Sept. [illegible].) [illegible] total decay averaged [illegible], the balance of cabbage in each car requiring trimming of 5 to 10 outer leaves to make clean heads. [illegible] throughout the other car, trimming of [illegible] to 7 leaves [illegible].
Wyoming: (Market inspection at New Orleans and Fort Worth, 2 cars, Aug. [illegible], Sept. [illegible].) Slimy soft rot occurring throughout both loads, in one car outer 3 to 4 leaves affected, the other car with [illegible] to 50% of heads decayed in stem to depth of [illegible] to 4 inches, requiring trimming of 4 to 6 outer leaves.

Black mold caused by Alternaria brassicae.

Cars arriving at Pittsburgh and New Orleans from Illinois, Ohio and Wisconsin showed black mold affecting the outer 2 to 3 leaves on from [illegible] to [illegible] of the heads.

Gray mold caused by Botrytis sp.

New York: (Market inspection at Philadelphia, 1 car, Sept. 14.) Ten percent of heads covered with gray mold.

CANTALOUPE

Decay (Cause undetermined)

Inspection at most of the markets during July, August and September showed a large percentage of decay in cars of cantaloupes coming from the states of Arkansas, California, Illinois, Indiana, Iowa, Ohio and Pennsylvania. The cause of this decay is as yet not definitely determined.

Seven cars from Arkansas averaged about 20% decay which was heaviest in top layer. In melons from California decay ranged from 2 to 10% in lower layer of crates to 40 to 100% in top layer. Illinois stock averaged 15% decay although some cars contained as high as 50% infection. Over 50% bad decay was noted in 2 cars of Iowa cantaloupes; those from Indiana ranging from 5% in 1 car to 35 and 50% in the other 2 cars. Only a very slight amount of decay was noted in melons from Ohio. Pennsylvania melons averaged 5% decay.

CARROT

Rot caused by Sclerotinia libertiana.

Illinois: (Market inspection at Philadelphia, 1 car, Sept. 21.) Watery soft rot affecting 25% of carrots, decay starting at end and affecting half of carrot and being covered with white mold.

CELERY

Rot probably caused by Bacillus carotovorus.

Michigan: (Market inspection at Pittsburgh, 5 cars, Aug. 3-Sept. 3.) In center of all crates the tops of stalks and leaves were decayed and slimy, the decay being heaviest in top layers of crates.

Rot caused by Sclerotinia libertiana.

Colorado: (Market inspection at New Orleans, 160 crates, Sept. 7.) Watery soft rot with white mold showing on all tops of bunches throughout car and affecting 1 or 2 outer branches of occasional bunch in center of crates.

New York: (Market inspection at Philadelphia, 26 crates, July 26.) Watery soft rot affecting outer 1 to 2 branches of 23% of bunches.

CUCUMBER

Decay (Bacterial)

Maryland: (Market inspection at Pittsburgh, 2 cars, July 29-Sept. 13.) In 1 car 90% of cucumbers showed 1 to 10 decay spots with additional gray mold infection; in other car 10% of cucumbers being completely decayed and 65% decayed in spots 3/4 inch in diameter.

Pennsylvania: (Market inspection at Pittsburgh, 1 car, Aug. 23.) Average decay 7%, an occasional cucumber being completely decayed.

GRAPE

Blue Mold caused by Penicillium sp.

California: (Market inspection at New Orleans and Pittsburgh, 5 cars, Sept. 7-12.) Blue mold ranging from 2 to 25%, averaging about 12%, in most cars decay being heaviest in center.

LETTUCE

Drop caused by *Sclerotinia libertiana*.

California: (Market inspection at Fort Worth, 255 crates, Aug. 26, Sept. 23.) Watery soft rot occurring in top layers, in one lot of 150 crates 1/3 of lettuce in top layer being badly decayed.

Rot probably caused by *Bacillus carotovorus*.

California: (Market inspection at Minneapolis, 1 car, Sept. 17.) Outer leaves of all heads showing decay, in top of load outer 3 to 6 leaves badly decayed and slimy; about half this amount of decay in bottom of load.

Colorado: (Market inspection at New Orleans, 336 crates, Aug. 27.) Lettuce in top layer of crates worthless, decay involving inner leaves; 30 to 35% decay in middle of load and 10% in bottom layer affecting 4 to 6 outer leaves.

New York: (Market inspection at Philadelphia and Pittsburgh, 3 cars, July 26-Aug. 1.) Average decay for the 3 cars 65%, slimy soft rot ranging in depth from 3 outer leaves to entire head. Much of stock in 1 car worthless.

Pennsylvania: (Market inspection at Philadelphia, part of car, Sept. 9.) Very heavy decay, from 10 outer leaves to entire head being decayed, average 87%.

ONION

Rot probably caused by *Bacillus carotovorus*.

California: (Market inspection at Boston, 1 car, July 10.) Average bacterial decay 6%, 28 sacks with 50 to 75% soft rot in outer tissues.

Illinois: (Market inspection at Detroit, New Orleans and Pittsburgh, 5 cars, July 24-Aug. 29.) Average decay in 3 cars 6%, outer scales affected. Infection in the other 2 cars 20 and 30% respectively.

Iowa: (Market inspection at New Orleans, Philadelphia and Pittsburgh, 11 cars, Aug. 7-29.) The average percentage of entirely decayed onions in the 11 cars was 25%. In some cars additional decay was found in outer scales.

Kentucky: (Market inspection at New Orleans and Pittsburgh, 1 car, 25 sacks, July 24, Sept. 7.) All of stock in the 25 sacks was worthless; soft rot in the other car affecting 1 to 3 outer scales of from 15 to 45% of stock.

Rhode Island: (Market inspection at Boston, 1 car, July 9.) Bacterial decay ranged from 10 to 50% affecting outer scales only, 20 sacks worthless.

Virginia: (Market inspection at Providence and Pittsburgh, 2 cars, July 8-25.) Infection for the 3 cars 6 and 10% respectively.

Washington: (Market inspection at Philadelphia and Pittsburgh, 4 cars, Aug. 18-28.) Average bacterial soft rot about 12%, affecting outer scales.

Neck Rot caused by *Botrytis* sp.

California: (Market inspection at St. Paul, 1 car, July 6.) Frpm 1 to 2% bad decay, 10 to 15% partially decayed.

Illinois: (Market inspection at Boston and Pittsburgh, 2 cars, Aug. 13-28.) Slight neck rot noted on about 30% of onions in 1 car; 3% in other car.

Indiana: (Market inspection at Cincinnati and Pittsburgh, 2 cars, Aug. 27-Sept. 10.) Average neck rot in 2 cars 3%.

Black Mold caused by *Aspergillus niger*.

California: (Market inspection at Boston, 6 cars, July 10-Aug. 7.) Black mold ranged from 6 to 20%, averaging about 12% for the 6 cars.

LETTUCE

Drop caused by *Sclerotinia sclerotiorum*

California: (Market inspection at Fort Worth, 295 crates, Aug. 26, Sept. 23.) Watery soft rot occurring in top layers; in one lot of 192 crates 1/4 of lettuce in top layer being badly decayed.

Rot probably caused by *Bacillus carotovorus*

California: (Market inspection at Minneapolis, 1 car, Sept. 17.) Outer leaves of all heads showing decay, in top of some crates 2 to 6 leaves badly decayed and slimy, about half that amount of decay in bottom of load.

Colorado: (Market inspection at New Orleans, 170 crates, Aug. 27.) Lettuce in top layer of crates slimy, badly decayed, moldy involving outer leaves, 10 to 20% decay in middle of load and 10% in bottom layer affecting 4 to 6 outer leaves.

New York: (Market inspection at Philadelphia and Pittsburgh, 7 cars, July 26-Aug. 1.) Average decay for the 7 cars 46%, slimy soft rot ranging in depth from 3 outer leaves to entire head. 15% of stock in 1 car worthless.

Pennsylvania: (Market inspection at Philadelphia, part of car, Sept. 11.) Very heavy decay, from 10 outer leaves to entire head being decayed, averaging 87%.

ONION

Rot probably caused by *Bacillus carotovorus*

California: (Market inspection at Boston, 1 car, July 10.) Average bacterial decay 6%, 20 sacks with up to 75% soft rot in outer tissues.

Colorado: (Market inspection at Detroit, New Orleans and Pittsburgh, 3 cars, July [illegible]-Sept. [illegible].) Average decay in 3 cars 6%, outer scales affected. Infection in the other 2 cars 20 and 15% respectively.

Iowa: (Market inspection at New Orleans, Philadelphia and Pittsburgh, 11 cars, Aug. 25-Oct. 9.) The average percentage of entirely decayed onions in the 11 cars was 11%. In some cars additional decay was found in outer scales.

Kentucky: (Market inspection at New Orleans and Pittsburgh, 2 cars, 14 crates, July 26, Sept. 3.) 14% of stock in the 14 crates was worthless, soft rot in the other car affecting 1 to 3 outer scales of from 1% to 50% of stock.

Rhode Island: (Market inspection at Boston, 1 car, July 8.) Bacterial decay ranging from 10 to 30% affecting outer scales only, 60 sacks worthless.

Virginia: (Market inspection at Providence and Pittsburgh, 2 cars, July 2-10.) Decay for the 2 cars 4 and 12% respectively.

Washington: (Market inspection at Philadelphia and Pittsburgh, 4 cars, Aug. 16-Oct. 1.) Average bacterial soft rot about 15%, affecting outer scales.

Neck Rot caused by *Botrytis* sp.

California: (Market inspection at St. Paul, 1 car, July 5.) From 1 to 2% and occasionally to 15% partially decayed.

Illinois: (Market inspection at Boston and Pittsburgh, 2 cars, Aug. 12-20.) Slight neck rot noted on about 30% of onions in 1 car; 5% in other car.

Michigan: (Market inspection at Cincinnati and Pittsburgh, 2 cars, Aug. 27-Sept. 19.) Average neck rot in 2 cars 6%.

Black Mold caused by *Aspergillus niger*

California: (Market inspection at Boston, 5 cars, July 10-Aug. 7.) Black mold ranged from 6 to 25%, averaging about 12% for the 5 cars.

Illinois: (Market inspection at Detroit and Pittsburgh, 2 cars, Aug. 7-28.) Black mold infection 2 and 50%, affecting market value.

PEACH

Brown Rot caused by Sclerotinia cinerea.

California: (Market inspection at Cincinnati, Fort Worth and Memphis, 3 cars, Sept. 9-26.) Brown rot infection slight in 1 car, the other 2 cars averaging 30%.

Colorado: (Market inspection at Cincinnati, 3 cars, Sept. 14-16.) Average brown rot decay 7%, accompanied by black mold.

Delaware: (Market inspection at Detroit, 2 cars, July 15-18.) Decay in 1 car ranging from 3 to 33%, the other car showing 20% infection.

Georgia: (Market inspection at Boston, Detroit, Minneapolis, Philadelphia and Pittsburgh, 18 cars, July 8-Aug. 6.) Brown rot, usually accompanied by heavy growth of black mold, averaging 15% although some cars contained a much higher percent of decay, top layers ranging from 10 to 90%.

Illinois: (Market inspection at Detroit, 1 car, July 24.) Brown rot noted 5%.

Maryland: (Market inspection at Boston, Cincinnati and Pittsburgh, 8 cars, Aug. 1-Sept. 4.) Heavy infection in most cars. In the 4 cars of Elbertas 2 cars averaged 35 and 40%, the other 2 cars showing a small amount of brown rot. Average decay in 2 cars of Carman variety was 40 and 50%. Decay in 1 car of Late Crawfords 5-10%, Henshaw and Old Nixons 15% total decay.

New Jersey: (Market inspection at Pittsburgh, 3 cars, Aug. 19-Sept. 2.) Average decay in the 3 cars 10%, some baskets running much higher.

New York: (Market inspection at Cincinnati, 197 baskets, Sept. 2.) Brown rot present in all baskets, average decay 40%.

Oklahoma: (Market inspection at Cincinnati and Detroit, 4 cars, Aug. 12-15.) Average decay in 3 cars 6%, the other car with 10 to 15% decay.

Pennsylvania: (Market inspection at Boston, Cincinnati and Pittsburgh, 10 cars, July 16-Sept. 3.) Brown rot ranged from 2 to 35% with an average of about 14% decay in every car being heaviest in top layer.

Texas: (Market inspection at Detroit and Pittsburgh, 2 cars, July 24-25.) Two percent brown rot in each car.

Utah: (Market inspection at Cincinnati, 1 car, Sept. 12.) From 4 to 6% decay.

West Virginia: (Market inspection at Cincinnati, 3 cars, Aug. 29-Sept. 4.) Very heavy decay in 1 car, top layer being 3/4 decayed, the other 2 cars with 8 and 15% brown rot.

Scab caused by Cladosporium carpophilum.

Georgia: (Market inspection at Boston and Detroit, 5 cars, July 8-18.) In 3 cars only an occasional scabby peach was found, the other 2 cars with 7 and 10% infection.

Illinois: (Market inspection at Detroit, 2 cars, July 18-24.) Three percent scab in both cars, infection heavy.

Maryland: (Market inspection at Pittsburgh, 1 car, Aug. 23.) Scab noted 8%.

New Jersey: (Market inspection at Pittsburgh, 1 car, Aug. 30.) Scab in car 5%.

New York: (Market inspection at Cincinnati, 1 car, Sept. 2.) Slight scab.

Ohio: (Market inspection at Detroit, 1 car, July 15.) Five percent bad scab.

Pennsylvania: (Market inspection at Cincinnati and Pittsburgh, 2 cars, Aug. 28-Sept. 3.) Much scab noted in plain grades, fancy grades sound.

Texas: (Market inspection at Detroit, 1 car, July 24.) Five percent bad scab.

Illinois (Seven [illegible] 4 cars, [illegible]
Plots with infection 2 and 15%, [illegible]

Table [illegible]

[illegible]

[illegible]

Canada (Direct inspection at [illegible]
[illegible] infection.

Illinois (Direct inspection of [illegible]
in both cars, infection [illegible]

Michigan (Direct inspection of [illegible] 1 car, [illegible]

New Jersey (Direct inspection at [illegible]

New York (Direct inspection at [illegible] 1 car, [illegible]

Ohio (Direct inspection at [illegible] 1 car, [illegible]

Pennsylvania (Direct inspection at [illegible]

[illegible] (Direct inspection at [illegible] 1 car, [illegible]

PEANUT

Leaf Spot caused by Cercospora personata.

Alabama: (Armstrong) Many severe cases of leaf spot noted on peanuts which have reached maturity. One field of late peanuts has been seen with a severe infection. Disease unimportant until general crop had reached maturity.

Arkansas: (Elliott) Leaf spot only disease reported or observed on peanuts. This is common but not serious. The crop is short on account of drought.

Georgia: (Berry) Many fields showed considerable leaf spot but it came on so late that but little damage was done. Often the disease is found on the stalk and nuts. No doubt such diseased seed will constitute a source of infection for next year. The market value of the peanuts is also lowered. Disease is general over entire state but worst through Coastal Plain region. Possibly there has been a reduction in yield of 10% this year.

Louisiana: (Edgerton) The foliage of most of the plants is considerably spotted in about the same amount as usual. It is doubtful if the real loss amounts to much.

Mississippi: (Fields) Several fields observed where the leaf spot was present. Not much damage was done, however.

Oklahoma: (Learn) This is the only leaf spot disease reported thus far and is of minor importance.

South Carolina: Disease often found. Sometimes appears in at least 50% of the fields. The disease undoubtedly causes some severe losses, as in some cases the leaves are shed early in the growing season.

Tennessee: (Essary) Slight infection of Cercospora but it is not enough to cause serious loss. Variety Virginia White seems to be most susceptible.

Rot caused by Sclerotium rolfsii.

Alabama: (Peltier) Found in several sections of the state. Heaviest damage noticed did not exceed 2%.

Georgia: (Berry) Not plentiful this year and confined to Red Spanish. Occasionally fields show as high as 10-15% of the shoots killed. Only a small amount of nut rot was observed. The total loss will not exceed 1%.

South Carolina: This is a serious disease of peanuts, often causes a loss of 10 to 15% in some fields of Central and Coastal Sections of the state.

Other Diseases.

Alabama: (Peltier) A fruit rot causing about 5% damage was found in an 80-acre field which was not harvested promptly at maturity.

District of Columbia: (Haskell, Oct. 24.) A stem rot caused by Botrytis sp. was observed first on one plant in a garden patch Sept. 15. At the end of one month this particular plant was dead from the disease and the fungus had established itself all over the patch. Ten percent of the plants were so severely diseased that the yield will be practically negligible. The remainder of the vines, although injured, will probably produce a fair yield.

Usually the lower portions of the stems are attacked, causing foliage to wilt and finally die. Often, however, the lesions occur near the tips of the shoots and frequently the leaves themselves are affected. The disease is also common on the rhizomes where it is especially destructive as it may cut off the fruit from the parent plant.

Tennessee: (Essary) Last season there was heavy loss from some soil disease. Cultures of Fusarium were made from diseased plants, but the symptoms were those of Rhizoctonia.

Virginia: (Fromme) A stem rot or wilt has been reported from several places in the peanut section. The plants are destroyed in limited areas of fields. The causal organism is not known but a Fusarium is suspected.

POTATO

Late Blight caused by *Phytophthora infestans*.

Connecticut: (Clinton) Apparently did very little injury in the state this year. Have had no complaints of blighted foliage or rotting tubers and have seen no severe injury.

Maryland: (Temple) An extensive survey of late potato fields on the Eastern Shore and in southern Maryland does not reveal any cases of late blight. With the exception of poor or weak stands in some fields the crop is good and will be above normal if frost does not kill the vines early.

New Hampshire: (Butler) Loss 15-20%. Disease general over state in September.

New Jersey: (Cook, Oct. 15.) No recent development and no rot reported.

New York: (Chupp, Oct. 15.) Only one case of rot reported this season.

North Dakota: (Bolley) Disease has never been serious in state, special search this year failed to reveal it.

Pennsylvania: (Orton, Oct. 15.) Infection more or less general but slight in most sections except in southeastern portions. No cases of serious rotting have been found, therefore disease will be of minor importance this year.

Virginia: (Fromme) No late blight reported except from Wise and Dickinson Counties (SW) in home gardens. It appeared on tomatoes in Blacksburg late in September, but practically all potatoes were harvested at that time.

West Virginia: (Giddings, Oct. 15.) Not general as was the case in 1917 but caused a loss to late potatoes of 20-30% in Tucker, Randolph, Greenbrier and Fayette Counties.

Russet Scab caused by *Rhizoctonia solani*.

New Jersey: (Massey) Common and severe on early potatoes.

Pennsylvania: (Orton) Russet scab generally prevalent but no worse than usual.

South Dakota: (McCall) Disease showing in potato fields in all parts of state. Rarely a field is observed that does not show black sclerotia on the surface of tubers.

Utah: (O'Gara, Oct. 15.) Very bad.
(Wilson in C. &. T. News Notes Sept. 28.) "Disease has caused some damage but I believe not so much as in other years".

Wisconsin: (Vaughan) Prevalent in about same amounts as usual.

Fusarium Wilt caused by *Fusarium oxysporum*.

Nevada: (Frandsen) Fusarium wilt again common.

Utah: (Wilson in C. & T. News Notes Sept. 28.) About Aug. 1 wilt began to appear rather frequently in almost every part of state. It increased in amounts until about Aug. 20, when almost every field was more or less infected (1-100%). This has been one of the driest years on record and in many cases irregular irrigation has doubtless contributed to the prevalence of wilt.

Rot caused by Various Organisms.

California: (Milbrath in C. & T. News Notes, Oct. 12.) Owing to the recent unusually heavy rainfall the percentage of Fusarium rot has increased. Being under water in the fields will accelerate such rots in late digging.

Nevada: (Frandsen) On the Experiment Station farm at Reno there was a 50% loss of potatoes due to a rot which appears to be caused by a bacterium resembling *Pseudomonas solanacearum*. Unusually heavy and long continuing rains during the latter part of September and first of October seem to have favored the development of tuber rots.

POTATO

Late Blight caused by *Phytophthora infestans*.

Connecticut: (Clinton) Apparently did very little injury in the state this year. Have had no complaints of blighted foliage or rotting tubers and have seen no severe injury.

Maryland: (Temple): An extensive survey of late potato fields on the Eastern Shore and in southern Maryland does not reveal any cases of late blight. With the exception of poor or weak stands in some fields the crop is good and will be above normal if frost does not kill the vines early.

New Hampshire: (Butler) Loss 1-10%. Fairly general over state in September.

New Jersey: (Cook, Oct. 19): No further development noted on the vegetation.

New York: (Chupp, Oct. 15): Only one case of rot reported this season.

North Dakota: (Bolley). [illegible] has never been serious in state; [illegible] each year failed to permit it.

Pennsylvania: (Orton, Oct. 15): Infection more or less general but spread at most places except in southeastern sections. In spite of continued [illegible] have been found, [illegible] disease will be of minor importance this year.

Virginia: (Fromme) No late blight reported except from Accomac and Northampton Counties [illegible] in home gardens. It appeared as [illegible] late in September, but practically all potatoes were harvested at that time.

West Virginia: (Giddings, Sept. 20): Not as bad as was the case in 1928 but caused a loss to late potatoes of 10-20% in Preston, Randolph, Greenbrier and Fayette Counties.

Black Scurf caused by *Rhizoctonia solani*

New Jersey: (Cook). Common and severe on early potatoes.

Pennsylvania: (Orton) [illegible]

[illegible]

Ohio: [illegible]

[illegible]

Wisconsin: (Vaughan) Prevalence is about [illegible] as usual.

Fusarium Wilt caused by *Fusarium oxysporum*

Kansas: (Elmer) [illegible]

Ohio: (Wilson in C. T. Hess letter Sept. 28): About Aug. 1 wilt began to appear rather frequently in almost every kind of potato. It increased in amounts until about Sept. 20, when almost every field was more or less infected (1-10%). This has been one of the driest years on record and in many cases irregular irrigation has doubtless contributed to the prevalence of wilt.

Rot caused by Various Organisms.

California: (Milbrath in C. T. Hess letter, Oct. 12.) Owing to the recent unusually heavy rainfall [illegible] of tuber rot was increased, being under water in the fields [illegible] rots in late digging.

Tennessee: [illegible]

Texas: [illegible]

Rots (Bacterial).

Louisiana: (Market inspection at New Orleans, 1 car, Sept. 4.) Bliss Triumph most heavily affected, ranging from 5 to 20%.

Maryland: (Market inspection at Pittsburgh, 3 cars, Aug. 20-Sept. 7.) Slimy soft rot, probably due to *Bacillus carotovorus*, found in every car, 2 cars averaging 10 to 15%, the other car having only a slight amount of decay.

Michigan: (Market inspection at Pittsburgh, 1 car, Sept. 17.) Slight decay.

New Jersey: (Market inspection at Pittsburgh, 17 cars, Aug. 15-Sept. 5.) Bacterial decay affected from 1 to 15% of tubers in all cars, averaging 4%.

Pennsylvania: (Market inspection at Detroit and Pittsburgh, 5 cars, Aug. 16.) In the 3 cars bacterial decay varied from a slight amount to 90%, average 10%.

Virginia: (Market inspection at Pittsburgh, 10 cars, Aug. 15-21.) Slimy decay, mostly due to organisms of the *Bacillus carotovorus* type, averaged about 10%, although some cars had 20% decay.

SUGAR BEET

Phoma Rot caused by *Phoma betae*.

Colorado: (Robbins) Observed in numerous beet growing sections but the loss is slight.

Utah: (O'Gara) Very little rotting has been seen this year.

Wisconsin: (Vaughan) One report from Chippewa County. Beets made a good stand and excellent early growth. Too dry in mid and late summer for the development of fungi. Beets suffered somewhat from lack of water.

Leaf Spot caused by *Cercospora beticola*.

Colorado: (Robbins) Almost universally present but injury not serious.
(Nuckols) Seems especially bad at Fort Collins this year. Disease is common on late beets in the state.

Wisconsin: (Vaughan) Very limited amount of leaf spot seen, not enough to do any appreciable damage.

Rhizoctonia.

Colorado: (Nuckols) Disease seemed bad in Ft. Morgan in two or three fields where the reduction in yield will be 5-10%. Occasional diseased beets seen in other parts of state.

SUGAR CANE

Nematode Injury caused by *Heterodera radicicola*.

Florida: (N. A. Cobb) Ten stalks of sugar cane extremely heavily affected with *Heterodera radicicola* were recently received at the Office of Sugar Plant Investigations, Bureau of Plant Industry, from River Junction, Florida. The cane had been grown in light, sandy soil and most of the roots of each plant were available for examination. The injurious results due to the attack of nema were to be seen in all parts of the root system. All samples were badly infested, some of the young stalks manifestly had died, mainly, perhaps fully, as a result of nema attack. While one or two of the root systems showed an abundance of small feeding roots, in most cases the number of these were below normal and in some cases they were very few. In most of the root systems the greater portion of the larger roots were already dead or nearly so and many of these were so decayed that their previous condition as to nem

Rots (continued)

Louisiana: (Earliest inspection at New Orleans, 1 car, Sept. [illegible]) [illegible] most heavily [illegible]

Maryland: (Earliest inspection at Pittsburgh, 3 cars, Aug. [illegible]) [illegible] rot, probably due to [illegible] [illegible] ranging 10 to 15% [illegible]

Michigan: (Earliest inspection at Pittsburgh, [illegible] Sept. 17.) [illegible]

New Jersey: (Earliest inspection at Pittsburgh, [illegible] cars, Aug. [illegible]) [illegible]

Pennsylvania: (Earliest inspection at [illegible] and Pittsburgh, [illegible]) [illegible]

Virginia: (Earliest inspection at Pittsburgh, [illegible] cars, Aug. [illegible]) [illegible] mostly due to [illegible] although [illegible]

SUGAR BEETS

Crown Rot Caused by [illegible]

Colorado: [illegible]

Utah: [illegible]

Wisconsin: [illegible]

Leaf Spot caused by [illegible]

Colorado: [illegible]

Wisconsin: [illegible]

[illegible]

Colorado: [illegible]

SUGAR CANE

[illegible]

Florida: [illegible]

infestation could not be accurately judged. The main roots of three of the stalks were counted and classified and it was found that of about 356 roots approximately one-half were dead, while of those alive 45% had well developed galls. So far as is known, this is by far the worst case recorded on cane. It has usually been considered that this pest is not a serious one on this host. It has been observed in various cane growing regions (Java, Australia and Hawaii) but has never been reported as doing damage to an extent comparable to that exhibited by these specimens from sandy Florida soil.

WATERMELON

Stem End Rot caused by *Diplodia* sp.

Sixty-eight cars of watermelons were inspected at the various markets during July, August, and September, these melons having been grown in the states of Alabama, Colorado, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Missouri, North Carolina, Ohio, South Carolina and Texas. The largest shipments came from Indiana and averaged 20% stem end decay, although some cars averaged much higher. The watermelons from all other states mentioned showed high percentages of decay in well advanced stages. Georgia shipments ranged from 3 to 75% with an average of at least 15%. Stem end rot was present in all other cars in varying amounts.

Anthracnose caused by *Colletotrichum lagenarium.*

Anthracnose was found in every shipment of watermelons inspected at many of the principal markets, these melons coming from the states mentioned under the heading "Stem End Rot". In most all cases this was evident in pock marks extending well over surface of melon but not penetrating deeply into rind. A large percentage of melons from all states named were so marked. A few cars only contained decay.

Infestation could not be accurately judged. The main roots of three of the stalks were counted and classified and it was found that of about [illegible] roots approximately one-half were dead, while of those alive [illegible] had well developed galls. [illegible] this is by far the worst case [illegible]. It has usually been considered that this pest is not a [illegible] one on this host. It has been observed [illegible] Africa, Australia and [illegible] that [illegible] Florida soil.

[illegible]

[illegible]

[illegible] for July, August, and September [illegible] Alabama, Arkansas, [illegible] Georgia, Illinois, Indiana, Iowa, [illegible] North Carolina, Ohio, South Carolina, Tennessee and Texas. [illegible]

[illegible]

[illegible] was found [illegible] the principal [illegible] [illegible]